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# Making the Transition: Digital Archiving for Historic Preservation

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May 5, 2006

To the Graduate School:

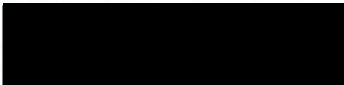
This thesis entitled "Making the Transition: Digital Archiving for Historic Preservation" and written by Celeste Eureka Wiley is presented to the Graduate School of Clemson University. I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science with a major in Historic Preservation.

  
Jennifer Mc Stotts, Thesis Advisor

We have reviewed this thesis  
and recommend its acceptance:

  
Daniel Nadenicek

  
Ralph Muldrow

  
Ashley Robbins

Accepted for the Graduate School:

  
0

MAKING THE TRANSITION:  
DIGITAL ARCHIVING FOR PRESERVATION

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A Thesis

Presented to  
the Graduate Schools of  
Clemson University  
And  
College of Charleston

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science  
Historic Preservation

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By  
Celeste Eureka Wiley

May 2006

Advisor: Jennifer Mc Stotts



## ABSTRACT

This thesis is a case study following the acquisition of a collection of photographs into the Avery Center for African American Research and addresses how materials may be treated for cataloging. It follows the collection from its arrival at the center to how its contents are evaluated. There is a brief history in the development of photographic materials given to provide background information so the reader may understand why some of the materials in the acquired collection are decomposing. Further background is given into the discovery of deacetylation and what potential problems it may cause. The thesis covers how basic testing was done on the collection to determine the extent of its damage. The final stage of the paper covers what needs to be accomplished at the Avery for the collection to be cataloged digitally and suggestions are made for how this process might be carried out.



## ACKNOWLEDGEMENTS

I wish to thank Dr. Jeff Burden for creating Clemson's Graduate Program in Historic Preservation and for believing enough in my potential to select me as one of the inaugural class.

Also, to Jennifer Mc Stotts, thanks for the pushing me when I needed it. I couldn't have asked for a better advisor.

## TABLE OF CONTENTS

TITLE PAGE.....	I
ABSTRACT.....	II
ACKNOWLEDGEMENTS.....	III
TABLE OF CONTENTS.....	IV
FIGURES.....	V
INTRODUCTION.....	1
WHAT IS HAPPENING TO THE COLLECTION?.....	7
PHOTOGRAPHIC DECOMPOSITION.....	9
NEW MATERIALS AND NEW PROBLEMS: DISCOVERING "VINEGAR SYNDROME" .....	12
WHAT SHOULD BE DONE WITH THE COLLECTION? .....	17
IS IT IMPORTANT TO KEEP THIS COLLECTION? WHAT IS ITS SIGNIFICANCE? .....	18
HALTING THE DECOMPOSITION .....	22
CATALOGING: KEEPING A PERMANENT RECORD .....	24
CURRENT PHYSICAL PROBLEMS WITH WORKING AT THE AVERY .....	28
THE ACTION PLAN: GETTING IT ORGANIZED .....	32
CONCLUSION .....	36



## FIGURES

Figure	Page
1. The Avery Institute in decline, circa 1968 and today. Photos courtesy of the Avery Center for African American Research. ....	2
2. Sweetgrass baskets in the Avery archives. Photo by Celeste E. Wiley. ....	2
3. Walter Boags as a military pilot and a rough sorted box from the Boags collection. Portrait courtesy of the Avery Center for African American Research and Photo by Celeste E. Wiley. ....	4
4. Chart showing breakdown of the Boags collection after rough sorting. ....	5
5. Warped and cracked negatives from the Boags collection. Courtesy of the Avery Center for African American Research ....	8
6. The Hyatt billiard ball at the Smithsonian Institution. Photo courtesy of the Smithsonian National Museum of American History; Behring Center. ....	10
7. Detail of Safety Film labeling on an acetate negative. Photo by Celeste E. Wiley. ....	12
8. Emulsion bubbling of the acetate negative backing. Courtesy of the Avery Center for African American Research ....	13



9.	Storage envelope from the Boags collection and its contents. Courtesy of the Avery Center for African American Research .....	15
10.	View of the photo catalog page in PastPerfect .....	28
11.	View of the Archive catalog page in PastPerfect .....	29
12.	More views of the same negatives in figure 8. Courtesy of the Avery Center for African American Research .....	35

## INTRODUCTION

In 1868 the Avery Normal School<sup>1</sup> opened as Charleston's first free school for African Americans. The Avery's student body continued to grow in size over the years, and it eventually became a public city school in 1947, though it remained exclusively African-American because of the segregated south. The school eventually closed, and by the 1970s, the empty building had fallen into disrepair. When the proposition was raised in the 1970s to convert the old school into apartments, several of the Avery's alumni were roused to save the building to prevent the loss of the site and its significance. It was the Charleston chapter of The Links, a national social group for African-American women, who started formal fundraising to save the Avery in 1978.

In 1985, the Avery was acquired as part of the College of Charleston, and the Avery Research Center for African-American History and Culture was finally opened in 1990.<sup>2</sup> The Avery now houses a substantial collection of African-American artifacts as well as a research library. It has become the center's recent

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<sup>1</sup> The term "Normal School" was commonly used at this time to identify public schools.

<sup>2</sup> The Avery Center for African American History and Culture.



mission to organize its widely varied collection of artifacts so that it may also be available as research material. The materials in the collections vary from slave badges and shackles, to sweetgrass baskets, Freedman's papers, and a vast collection of photographs.



Figure 1. The Avery Institute in Decline, 1968 (left) and Today (right)

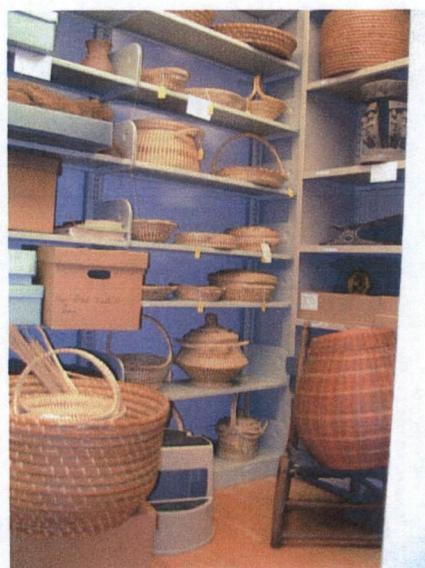


Figure 2. Sweetgrass Baskets in the Avery Archives



From the late 1940s until the early 1980s, while the Avery flourished and then slid into decline, Walter Boags was working as one of the only African-American photographers in Charleston. Born in 1913, Mr. Boags had a career as a military pilot and then trained as a mortician. It was sometime after the war when Mr. Boags took a photography class and decided to open a studio. Prior to the advent of readily accessible portrait photography (through the proliferation of Polaroid and family portrait studios at large stores such as Sears and Wal-Mart) if you were Black in Charleston, Mr. Boags Modern Arts studio was where you had your picture taken. Walter Boags died in 1997. Following his death, his archives were literally stuffed into cardboard boxes and then left to languish in a garage for several years before being donated to the Avery in 2000.

When the Boags collection of photographs arrived at the Avery, it consisted of some forty linear feet of materials, 90% of which were completely unsorted.<sup>3</sup> I was introduced to the collection by chance after a meeting with Harlan Greene, the Avery's Director of Archive Projects. I was researching Civil War era photographs of African-Americans when Mr. Greene mentioned the collection and its need for immediate care. I jumped at the opportunity and spent the summer completing a rough sort of these materials, removing everything

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<sup>3</sup> "ACRL Standards and Guidelines," American Library Association, 2005.

<<http://www.ala.org/crl/guides/>> 24 Feb. 2006. Archived Materials are measured in linear feet, a linear foot consisting of a 15x12 ½ x10 inch box.



from actual trash (such as twenty-year-old candy wrappers) to irrelevant materials (blank envelopes) and reducing materials such as Mr. Boags' order forms. There were hundreds of copies of the same forms – about a dozen of each type was saved as a sampling. The remaining contents of the boxes were then sorted in general categories. This reduced the forty linear feet to approximately twenty-six feet in approximately twenty categories (see Figure 4).



Figure 3. Walter Boags as a Military Pilot (left) and a Rough Sorted box from the Boags Collection (right)



CATEGORY	NUMBER OF BOXES	DETAILS
Weddings	3	
Copy Work	1	
Roll Film	1	Developed negatives still on spools
Portraits 1950 - 59	1	
Portraits 1960 - 69	1	
Portraits 1970 - 79	2	
Portraits 1980 - 89	1	
Portraits Undated	1	
Legal	1	Photos taken for evidence in legal cases
Miscellaneous	1	Mainly images of Funerals and Architecture
Miscellaneous Informal	1	Various candid images from family functions
Of Interest	1	One envelope of various photos which may be of regional interest (i.e.: early photos of the Avery, Martin Luther King, etc.)
High School	3	Mainly images of sports, proms, yearbook, and band
11x14 High School Portraits	1	
11x14 Portraits	1	Non-High School
School (Non-High School)	1	Mainly elementary school images, portraits as well as group photos.
Groups	1	Groups of people not related to school or wedding functions
Personal Papers	1	Direct Personal
Miscellaneous Papers	1	Catalog, Magazines, Equipment Info, Equipment Ads and Promos
Miscellaneous Items	1	Darkroom Equipment, Props

Figure 4. Assessment of Boags Collection After Rough Sorting



Despite all that was accomplished in this first phase, the Avery was still left with a substantial collection of materials that needed to be properly cataloged. The hope was, and still is, that the Avery's collection will be available to researchers. However, the Boags collection still has a long process to go through. The collection needs to be further sorted into some sort of order, with each set of images being documented. Also, the photographs have a series of problems that need to be addressed before they can be accurately cataloged and stored in an archival manner. I will discuss further in this thesis what difficulties need to be addressed and how they might be resolved.

### WHAT IS HAPPENING TO THE COLLECTION?

Walter Boags had a filing system of his own, which consisted of keeping the negatives and temporary proof prints of each sitting in a small brown paper bag (much like an old lunch sack) with the person's name and address, the date of the sitting, and what prints they ordered handwritten on the bag. A large portion of the black and white proof photographs that were stored with the Boags collection were completely ruined, having turned completely black, leaving the original image impossible to make out. The proof prints were created to be temporary; in the twentieth century, it was common practice for the customer to receive a temporary "proof" of their sitting. It was from these proofs that they were to select which poses they liked best and should be made into finished prints. To ensure that these prints would not be taken from the photographer, they were processed with a temporary fixer.<sup>4</sup> By doing this, the photographer was assured that their customer would not abscond with the proofs without purchasing finished prints. Because of the temporary fixer, the photographs would turn black if exposed to normal light conditions for more than forty-eight hours.

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<sup>4</sup> Fixer is the chemical process which allows photographic prints to be exposed to normal light without turning completely black.



It is unknown if these envelopes were in any particular order while they were in his possession, but when they arrived at the archive, the materials had been tossed into boxes seemingly without order apart from an approximate separation by decade. In handling them for the rough sorting process, I found that approximately a third of the older negatives (pre-1970) were in various states of decomposition, many had become brittle and warped, numerous negatives and prints had noticeable fungal and mildew growth, and many were severely cracked. However, the most conspicuous problem came when the boxes were first opened. As each container was sorted through, it emanated a pungent, acidic smell.

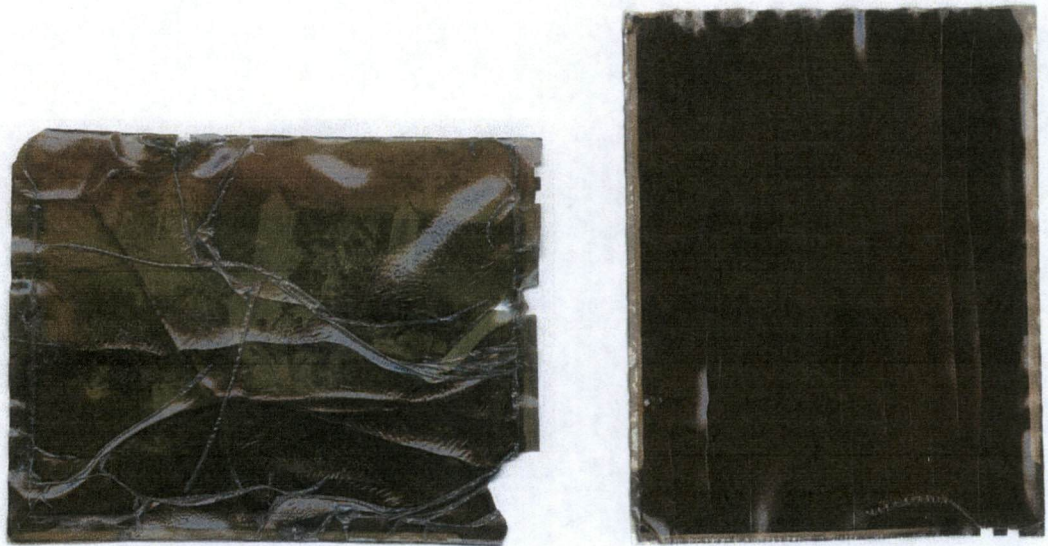


Figure 5. Warped and Cracked Negatives from the Boags Collection



### Photographic Decomposition

The three main enemies of photographic materials are heat, moisture, and light. Obviously, the standard climate conditions of the southeastern United States are generally not favorable to the preservation of these materials. However, we must be familiar with some of the fundamentals about photographic negatives and their history to understand how and why photographs and negatives degrade.

From 1800 until about 1920, all photographic negatives consisted of a silver emulsion applied to a plate of glass. It was not until the 1900s that the technology to create non-glass negatives was introduced. Oddly enough, it was the race to find a replacement for rapidly depleting ivory sources that brought about the creation of cellulose nitrate. In the mid 1800s, a world wide competition was launched to find a cheap and easily manufactured substitute for ivory billiard balls. At a time when the science of plastics was still in its infancy, an amateur American scientist named John Wesley Hyatt took part in this competition. In 1868, his experiments resulted in the invention of cellulose nitrate (also called nitrocellulose) which eventually came to be called "celluloid".<sup>5</sup>

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<sup>5</sup> "Hyatt Celluloid Billiard Ball," Smithsonian National Museum of American History; Behring Center, Smithsonian Institution, 02 Feb. 2006  
<<http://americanhistory.si.edu/collections/object.cfm?key=35&objkey=18>>.





Figure 6. The Hyatt Billiard Ball at the Smithsonian Institute

The development of celluloid didn't win the billiard ball competition, but Hyatt found his creation to be much more malleable and diverse in its uses. In 1871, Hyatt founded the Celluloid Manufacturing Co. for the production of faux ivory billiard balls. They also made boning for corsets, hair combs, jewelry, and experimented with false teeth. Celluloid was continually improved upon, and by the early 1900s, they created a completely new item: film. The use of celluloid nitrate as a backing meant that there was now a lightweight and flexible base for the silver emulsion which made up the photographic image. This flexibility allowed for the development of movie film as well as the expansion of amateur photography as the reduction in weight and cost of the material allowed for easier handling.



Unfortunately, the nitrate backing also turned out to be highly combustible; fires could be started from something as simple as overheating with a light bulb from a projector. Because the chemistry of photography was not commonly well understood, nitrate films that had not been thoroughly rinsed of their developing chemicals (and even some that were) have been known to spontaneously combust while in storage. Even the National Archives, which has always monitored and kept its storage facilities up to date, has suffered two fires from nitrate film self-combusting.<sup>6</sup> Given that nitrocellulose is made from cotton and nitric acid – the same components as early gun cotton (an explosive packing in early pistols) - it probably shouldn't have been a surprise. There is even a common urban legend that, on occasion, those celluloid billiard balls exploded during use.<sup>7</sup>

In 1934, the improvement known as Safety Film was introduced. This film had an acetate polymer base instead of nitrate. This acetate base cannot burn – at least not easily. Today, all photographic negative film is still labeled “Safety Film”. Despite this major improvement in the safety of photographic film, by the

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<sup>6</sup> Anthony Slide, Nitrate Won't Wait! Film Preservation in the United States, (Jefferson: McFarland, 1992) 15.

<sup>7</sup> “New Science New Materials, New Power,” Making the Modern World, 2004, The ISB Fund of the Treasury and the Cabinet Office, 16 April 2006  
<[http://www.makingthemodernworld.org.uk/stories/the\\_second\\_industrial\\_revolution/05.ST.01/?scene=6&tv=true](http://www.makingthemodernworld.org.uk/stories/the_second_industrial_revolution/05.ST.01/?scene=6&tv=true)>.



1950s a new problem was arising. Archivists around the world reported noticing a pungent vinegar-like smell emanating from stored stock. The first major recorded case came from the government of India, who contacted Kodak regarding this phenomenon.<sup>8</sup>



Figure 7. Detail of Safety Film Labeling on an Acetate Negative

### New Materials and New Problems: Discovering "Vinegar Syndrome"

The characteristic odor is caused by a process called deacetylation. When acetate, water, and heat are kept in prolonged contact, the acetate breaks down and forms a gas of acetic acid. As ions in the acetate react with the hydrogen molecules of the water, a layer of acetic acid gas forms between the film base and its silver photographic emulsion. The gas forms pockets as it tries to escape and

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<sup>8</sup> Les Paul Robley, "Attack of the Vinegar Syndrome: An In-depth Examination of the Insidious Virus that is Eating Away at America's Cinematic Heritage" *American Cinematographer*, June 1996.



over time, pushes the emulsion layer off the backing, creating the bubbled and cracked negatives we have now (see Figure 6). It is the pungent odor of the acetic acid that has coined the more common term for this type of deterioration - Vinegar Syndrome.



Figure 8. Emulsion Bubbling Off of Acetate Film Backing

There is a second problem with the deacetylation process in that it is autocatalytic. As the negatives continue to produce more acetic acid gas, the gas then essentially "infects" nearby surrounding negatives, which causes them to begin producing and releasing acetic acid gas, which also spreads, and so on. As shown in Figure 8, this storage envelope contained three negatives which were all taken at the same sitting. The negative on the bottom of the pile began to break down and it has clearly begun to affect the negatives that were on top of it.

The damage gets a little less severe with each successive piece, because the acidic fumes dissipate as they filter through each negative. However, given enough time, all three negatives would continue to decline. Each negative will continue to release acetic acid until the acetate substrate has completely broken down. As the emulsion continues to bubble and degrade, the backing continually becomes more brittle and fragile. Eventually, without intervention, it will become impossible to handle the negative without shattering it.





Figure 9. Storage Envelope and Decomposing Negatives

While the deacetylation is one of the biggest problems affecting the collection, it is not the only one. The photographs still need to be stored properly

so that the damage done to them is not allowed to progress or is at least slowed. The worst of the negatives, that is, those in the worst physical condition due to the chemical reaction, should be discarded for the protection of the rest of the collections in the archives, which would also address the issue of the limited storage space at the Avery.



### WHAT SHOULD BE DONE WITH THE COLLECTION?

Once the Boags collection was rough sorted, we needed to assess how severely the deacetylation had progressed. A series of brief tests were run to determine this. By isolating various samples of the collection, each in various states of decay, into sealed plastic bags with A-D Strips™. The strips are essentially vapor sensitive pH strips which change color based on how much acidic gas they are exposed to. The results of the tests showed that despite the nearly overpowering odor, the negatives are releasing minimal acetic acid gas. It is the original paper bags that seem to have the higher acidic reading. This is likely due to two things. First, all early paper bags were made from tree pulp which is highly acidic in nature. The act of storing the negatives and photographs in these bags was detrimental enough before the problem was compounded with the heat and humidity of the garage. Secondly, it is quite likely that the paper bags also absorbed much of the fumes that were released, so ironically, the material that likely helped set the decomposition in motion has also helped contain it from spreading throughout the entire collection.

It is without a doubt that the original storage bags should be removed from the negatives, but because they contain all of the image



information – and Walter Boags original handwriting – a record of them should be kept as well. All of the negatives need to be stored with the appropriate archival supplies. This would mean removing all of the acidic storage materials (paper bags, cardboard, etc.) and replacing them with appropriately buffered acid-free boxes and storage bags. Given the Avery's limited archive space, the question has been raised that perhaps only the most significant of the photographs should be kept. This raises yet another question; how do we determine what is and is not "significant"?

#### Is it Important to Keep this Collection? What Is Its Significance?

In my opinion, all of the photographs, however seemingly amateur or common in their composition or subject matter, are significant. Whether posed or candid, these photographs capture moments in time that are now gone forever. As society changes, so do our views as to what is significant. There was a time when the Victorian architecture of Charleston was considered tacky and dated. Many of those houses were torn down to be replaced with new "modern" housing. It is now a period that is looked back at with regret for all of the "significant" architecture we have lost. That same regret would likely be felt in the future for the lost photographs that today's managers removed from the collection for a lack of significance.



Perhaps more relevant is the story of Mathew Brady, an American photographer whose name is synonymous with images of the Civil War. Brady became famous because work brought the reality of the war to the public. However, soon after the war had ended, this period was commonly viewed in the American mind as something to be quickly forgotten.

Photography came of age in the civil war, and more than a million images were taken in four years for a public obsessed with seeing, and perhaps also thereby subduing the shock and carnage they were inflicting upon one another. But the public appetite for war photographs, fantastic during that war, dropped off sharply after Appomattox. Mathew Brady went bankrupt. Thousands of photographs were lost, forgotten, mislaid and misused. Glass plate negatives were often sold to gardeners, not for their images, but for the glass itself. In the years immediately following Appomattox, the sun slowly burned the filmy image of war from countless greenhouse gardens all across the country, as if the memories might be erased.<sup>9</sup>

Much of Brady's original works exist only in print form because of the loss of the negatives. In the future, it is the digital records at the National Archives that will ensure their continued existence.<sup>10</sup>

The debate over the significance of the Boags' photographs could continue for years. In the meantime, they continue to deteriorate and to put other

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<sup>9</sup> Ken Burns, "Kinship of the Soul", 1993 Speech.  
<<http://www.udel.edu/PR/Messenger/93/3/34.html>>. 29 March 2006.

<sup>10</sup> "Pictures of the Civil War," National Archives and Records Administration, College Park, 07 April 2006. <<http://www.archives.gov/research/civil-war/photos/>>.



photography collections in the archives at risk. At the very least, all of the images should be digitally stored, and those files should be kept in more than one location; even if the actual photographs and negatives are later disposed of, some record of them will remain.

The Boags Collection is currently in its rough-sorted order in archival boxes. However, it should now be stabilized to reduce the potential negative impact on the archives' surrounding collections. The use of a molecular sieve should help in containing any further off-gassing from deacetylation. Molecular sieves are now one of the recommended bandages for collections that have begun to deteriorate.<sup>11</sup> The molecular sieve works through the use of various chemical filters, such as ceramic beads or charcoal, which absorb excessive moisture and acetic acid fumes while still allowing air to circulate. This technology is basically the same as the little desiccant bags one might find in a new pair of shoes or a new purse. The archival products industry has recently released improved technology; the same chemically absorbent materials are impregnated in sheets of paper and storage boxes. These papers can be

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<sup>11</sup> Dr. Tulsi Ram, "Molecular Sieves and the Prevention of the "Vinegar Syndrome", 1992 AMIA Conference, 10 Dec 1992.

<<http://www.kodak.com/US/en/motion/support/technical/vinegar.jhtml>>.



interleaved between the negatives to provide a protective barrier between negatives, and the boxes will better contain any other gases that might escape.

Attention needs to be paid in regard to health safety when handling deteriorating film. There have been several health hazards noted from exposure to the acidic fumes that are released:

[A]cetic acid is quite water soluble. That means anywhere there is moisture you can form acidic solutions. Most frequently it appears as nose sinus and lung, throat, and sinus irritations as well as blepharitis and conjunctivitis (both irritations of the eye). In addition, there are cases of people getting mild to moderate acid burns caused by transferring these acid solutions formed on moist skin (particularly the palms of the hands) to other more sensitive areas (like the face). Acid solutions formed in the mouth can cause dental erosion too, just as sucking on lemons would do.<sup>12</sup>

To avoid potential health problems, the Australian Network for Information on Cellulose Acetate (ANICA) has recommended several simple precautions that can be employed while handling decomposing film and negatives:

1. Wearing rubber gloves while handling film. This is as compared to the typical cotton gloves worn by people handling archival materials. Cotton gloves, while preventing oils and moisture from the hands from transferring to historic

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<sup>12</sup> "Handling Vinegar Syndrome Material." ScreenSound Australia; National Screen and Sound Archive . Commonwealth of Australia 2002.  
<<http://www.screensound.gov.au/glossary.nsf/Pages/Vinegar+Syndrome?OpenDocument>>. April 2006.



materials are also absorbent and can therefore actually hold acids against the skin. Rubber gloves provide a non-reactive barrier between skin and material.

2. Wearing a dust mask and taking frequent breaks for fresh air, limiting exposure to materials to approximately twenty minutes at a time. This is a rough guideline, which will vary greatly depending on the amount of air circulation, how heavily the materials are off gassing, and the sensitivity of the individual handling the objects.

3. Frequently washing hands during, and showering after, handling the materials. This will, obviously, remove any irritating substances from the skin and hair preventing any transfer post-exposure.

4. Wearing glasses instead of contacts. If the handler requires vision correction, it is recommended that glasses be worn instead of contacts, as the prolonged exposure to fumes may be irritating or even damaging to contact lenses.

All of these steps can be easily employed as standards when handling the Boags collection.

### Halting the Decomposition

All current research suggests that the vinegar syndrome process, once started, cannot be stopped. At best, it can be contained and temporarily arrested. As mentioned before, the employment of molecular sieves will help contain the



fumes and inhibit the autocatalytic process. Storage in freezing temperatures has been proven to temporarily arrest the process of decomposition, but only while the negatives remain at 32° F. This option can cause other issues; humidity and constancy of temperature must be monitored, and this limits access to the collection as photographic materials that are kept in cold storage must undergo a slow thawing process (usually 24 – 48 hours) before being taken out into average indoor temperatures. Again, this is only a temporary bandage, as once the materials are brought back to room temperature, the deacetylation becomes immediately active.

There was a recent study which suggests that re-rinsing the materials in a bath of deionized water and calcium carbonate (baking soda) will significantly slow the damage and possibly stop the syndrome.<sup>13</sup> The calcium carbonate neutralizes the acids that have formed, however it will take more time to know whether the decomposition is truly stopped. This process is limited to film and negative stock that are in the early stages of vinegar syndrome as negatives in the advanced stages would be far too fragile to handle, and as the emulsion would already be so severely damaged that it would most likely not be worth the effort.

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<sup>13</sup> CITATION



## CATALOGING: KEEPING A PERMANENT RECORD

Once the collection is properly contained, the enormous task of cataloging its contents will need to be tackled. Given that the intent is for the collection to be available to researchers, the collections need to be cataloged in a way that allows for cross referencing of the subjects. There has been a large resistance to adopting digital technology in a good portion of the archivist community. Perhaps it is because as preservationists and historians, we are committed to the Object and Paper, things that are solid and trusted. In the past digital technology has proven to be problematic; files can be corrupted and lost, or hard to retrieve. However, it is too easy for one's knowledge to be eclipsed as these technologies continue to rapidly improve and change. It is imperative that we are familiar with the basics of the current programs.

In 1996, an artifact cataloging software called PastPerfect™ was introduced. The program was specifically designed for use by museums and has the ability to automatically cross-reference its database depending on the information that is applied to it. The software was recently acquired by the Avery, and the center is in the process of defining the procedures in which they will digitally archive their collections. I found that this task is so large, that it was



overwhelming, and I sought other sources that the Avery might use as a model on which to base how they catalog their collections.

Through the generous assistance of Harlan Greene, I was able to interview two of the curatorial administrators at the Gibbes museum in Charleston: Zinnia Willits, the Collections Manager, and Sara Arnold, one of the museum's Archivists. The Gibbes has already adopted the use of PastPerfect software. Being surprisingly ahead of the curve of many larger museums, the Gibbes has had their collections digitally cataloged for the past several years. When they acquired PastPerfect, they were able to transfer their archives from an older digital software directly to the new. This had a few problems of its own but was overall one giant step in the cataloging process that was completed almost instantly.

There were two specific matters pointed out by Mrs. Willits that the Avery could avoid. One was that while the Gibbes is now in the process of going back through records and making corrections here and there, such as records being placed in the wrong category, we at the Avery would be ahead in that we could input our information in the correct format the first time. The second was that the Gibbes is also working on updating the quality of their digital images. Due to the memory limitations of their past system, they inputted images with a



minimal amount of detail, mainly as jpegs with a low dpi.<sup>14</sup> They are now rescanning and re-photographing their collection to update the digital images.

The software program has four basic format groups: Archives, Photos, Objects, and Library. These four each break down into a multitude of subjects such as archeology, oral history, art, music, etc. While it would seem that the Photo format would be the obvious choice, after speaking with Mrs. Willits and Mrs. Arnold, it became clear that the Archives format would be the better option. Cataloging under this set-up allows for better cross referencing and for breaking down the collection into groups and subheadings. The Photo format would require inputting each photograph as an individual object unto itself. While that would not necessarily be incorrect, it would not allow the Avery's various photo collections to be separated.

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<sup>14</sup> Jpeg is an acronym for Joint Photographic Experts Group. Jpegs are a compressed file format that utilizes minimal computer memory. While this format is fine for simple images, it does not allow for enlarging or viewing details of images without a loss of clarity.

Dpi is the acronym for Dots Per Inch. By increasing the dpi of an image, the clarity of the image is increased. This allows for an image to be magnified without loss of detail.



**Photos Catalog**

Sorted by: ObjectID

1944 thru 1945

Year Range: 1944 thru 1945

Catalog date: 09/17/2003

Cataloged by: Pair, Mary L.

Status date: 09/17/2003

Status by: Pair, Mary L.

Status: OK

Setup Multimedia links

Print Size: 2" x 3"

Film Size:

Slide#: C1989

Neg#: C1989

Frame#:

Image Management (1 of 1)

Dimension Details

Accession

ObjectID: 2003.1.4

Object Name: Print, Photographic

Category: 8: Communication Artifact

Sub-category: Documentary Artifact

Accession#: 2003.1

Source: Hanley, Kristopher K.

Credit Line: For my father, Clair Norton Hanley

Home Location: PastPerfect Museum Archives: Room 200: File Cabinet 2: Drawer 4: Folder V-Z

Description:

Crew of the Old "G1" U.S.S. PC (C) 1801. Known to the crew as the P.I.B. (Pig Iron Bastard).

PC-1801 (USS Fierce)

PC-1588 class Submarine Chaser (ex Adroit class Minesweeper):

Displacement: 450 tons

Length: 173'8"

Beam: 23'

Printed: 11/17/03

**Photos**

Title: Crew of the P.I.B.

Photographer: Hanley, Clair N.

Studio: None

Place: South Pacific

Event: World War II

Medium: Cardstock/Paper/Photographic Emulsion

Frame:

Orig/Copy: Original

Neg Loc: Copy Negative Storage Box 1

Processing Method:

Provenance:

The photographer of these WWII Pacific Theater photographs is Claire Norton Hanley. Claire Hanley was a young naval officer during WWII. He served on the ship as Lieut. (jg) in the Pacific Theater. His ship, the USS Fierce, participated in major naval operations at the end of WWII including the invasions at Okinawa and Akashima Japan and Luzon in the Philippines.

Copyrights:

All rights belong to the PastPerfect Museum without restriction.

Legal: Related Location Condition Appraisal People, Classification, Subjects, Search Terms Notes Custom

Record 19 of 30

Dublin Core AAT online Change Catalog

Updated: 06/23/2004 09:34 AM

Updated by: Unknown

Update History

Figure 10. View of the Photos Catalog Format in PastPerfect



**Archives Catalog**

Sorted by: Objectid

Image Management (1 of 1)

1925 ca. 1916 thru 1945

Date Year Range Catalog date 10/18/2002

Cataloged by / /

Status date / /

Status by Status

Setup Multimedia links

Accession

Gift 01/16/2003

Objectid: 2003.1.1

Object Name: Hanley Family Collection

Category: 8: Communication Artifact

Sub-category: Documentary Artifact

Container: MS Box 12

Accession#: 2003.1

Source: Hanley, Kristopher K.

Credit Line: For my father, Clair Norton Hanley

Home Location: MS Box 12

Event

Container List Legal Related Location Condition Appraisal People, Classification, Subjects, Search Terms Notes Custom

Identity Statement Context Structure Conditions of Access and Use Allied Materials Description Control

Reference Code US PPM 2003.1.1 Multilevel Linking Level of Description Fonds

Title Hanley Family Collection

Dates of creation 1916-1945

Dates of Accumulation 1916-1945

Extent and medium of the unit of description (quantity, bulk, or size)

3 - Letters

3 - Certificates

10 - B&W photographs - Naval subjects WWII

Record 12 of 19 Dublin Core AAT online Change Catalog Updated 04/30/2004 03:44 PM Updated by Unknown Update History

**Archive**

**Scope and Content / Abstract**

The earliest of these family papers include a letter from Grandpa Hanley to his son Warren T Hanley. The bulk of the material deal with the World War II memorabilia of Warren's son, Clair Norton Hanley, who was an ensign in the navy and served in the Pacific Fleet. His small vessel was involved in several defining operations, including the invasion of Japan and the Philippines. The fonds includes the following:

- 3 - Letters
- 3 - Certificates
- 10 - B&W photographs - Naval subjects WWII
- 1 - Uniform bar with 3 stars
- 1 - Diary 1945

Figure 11. View of the Archive Catalog Format in PastPerfect  
Current Physical Problems with Working at the Avery



For a little over a year, the Avery has been undergoing a reorganization of its archives. The school/center has exchanged hands of ownership multiple times over the years, and this has lead to the typical bureaucratic complications that affect how the center is run and its inventory controlled. Now that it is in the care of the College of Charleston, it seems to be better managed, but acquiring the necessary equipment can be problematic and difficult. If the Avery is going to go through the extensive process of organizing its archives, it should use this time as an opportunity to jump into proper digital archiving as well. Digital technology will only continue to progress over time and delaying the transition will only make the process more complicated.

To begin the process of creating a digital library, the center will require a professional-grade scanner (with the ability to scan transparency materials as well as solid) and a computer with a large amount of memory and up-to-date storage-transfer capabilities.

Presently, the computer that the scanner is connected to has an external Zip drive<sup>15</sup>. Zip drives are a technology that is (as of this writing) about ten years

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<sup>15</sup> "Zip Drive," Wikipedia, 12 April 2006, Wikimedia Foundation, Inc., 12 April 2006. <[http://en.wikipedia.org/wiki/Zip\\_drive](http://en.wikipedia.org/wiki/Zip_drive)>. Zip drives were one of the first improvements in computer storage capacity. Zip disks have the ability to hold 100 megabytes (MB) of data, compared to the 10MB of the first floppy disks. When the technology was introduced to the market, it was common to purchase a separate drive that hooked up to your computer externally. This technology was quickly eclipsed by the Compact Disk (CD) which can hold an average of 650MB of data.



old and for the most part, already out of use. Much like the great video cassette battle of the 1980s, Zip Disks have gone the way of the Betamax tape<sup>16</sup> and are now replaced by CDs and jump drives<sup>17</sup>. Speaking of which, the current computer also has no USB<sup>18</sup> ports to even allow for the use of a jump drive/memory stick.

The scanner that is available can only read one negative at a time, and while this is not an unconquerable hurdle, this situation is clearly not the most cost efficient, as it would take an unnecessarily long time to complete the necessary work. Once the scanning issue is resolved, the problem then becomes one of transferring the data. It would be ridiculous to have to transfer the materials twice; once to the zip disk, and again to a second, more current storage device. This is assuming that the second computer would have a zip disk drive.

The center did acquire a high-end scanner over the summer; however, in

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<sup>16</sup> When Video Cassette Recorders (VCRs) were first introduced, they were sold in one of two formats; Beta or VHS. Beta produced a higher quality picture but was slightly more expensive. Eventually cost efficiency won out and only VHS was produced for the retail market. As of this writing, both technologies have for the most part been replaced by digital recording.

<sup>17</sup> "jump drive", [SearchStorage.com](http://searchstorage.techtarget.com/sDefinition/0,,sid5_gci869057,00.html), TechTarget, 12 April 2006. <[http://searchstorage.techtarget.com/sDefinition/0,,sid5\\_gci869057,00.html](http://searchstorage.techtarget.com/sDefinition/0,,sid5_gci869057,00.html)>. A jump drive - also known as a USB drive, flash drive, keychain drive, or disk-on-key - is a portable storage device that is lightweight enough to attach to a key chain. A jump drive, which looks very much like an ordinary highlighter marker pen, can be used in place of a floppy disk, Zip disk, or CD.

<sup>18</sup> "Computer bus," [Wikipedia](http://en.wikipedia.org/wiki/Computer_bus), 12 April 2006, Wikimedia Foundation, Inc., 12 April 2006. <[http://en.wikipedia.org/wiki/Computer\\_bus](http://en.wikipedia.org/wiki/Computer_bus)>. Universal Serial Bus. In computer architecture, a bus is a subsystem that transfers data or power between computer components inside a computer or between computers.



requesting a scanner, emphasis was placed on the need for a machine that could scan not only well, but quickly. What the center received was a scanner that was designed for bank use. It rapidly – almost violently – slings stacks of paper through the machine, scans them, and spits them out on the other end. This is clearly inappropriate for archives of delicate historic papers. And if that weren't enough, it can't do slides or photographic materials either.

Once the scanning issue is resolved, the second largest issue is that of computer memory. Currently the Avery's computer system is not networked with the rest of the College of Charleston. All of the Avery's computers are individual; meaning they are each limited to the amount of memory on a single hard drive. This also limits access to the collection for research to the one computer which contains the database. By networking the computers at the Avery, not just to each other but also to the mainframe at the College of Charleston, the data could be read from multiple computers. This would also allow for essentially unlimited data to be stored as well. It is the mainframe computer and its large storage capacity that allows for large records, such as the collections at the university's library, to be accessed by dozens of people at the same time without crashing the system or running slowly.

### THE ACTION PLAN: GETTING IT ORGANIZED

The first priority should be containing the collection to prevent it from harming other collections in the archives. This can be done by utilizing molecular sieves as well as employing the use of boxes which are imbedded with the molecular sieve technology. Once this is done, organizing each section of the collection can begin.

The second priority would be removal of the items most damaged by deacetylation from the negative collection. However, before they are removed, they should be digitally scanned and recorded into the PastPerfect™ system. Once this is completed, the damaged materials should be destroyed. It will definitely be an unfortunate loss, however, based on the risks they pose to the other collections at the Avery, the already limited storage space, and the unlikelihood that they will be able to be restored, we can consider their physical loss the lesser of two evils; and the digital record of them will remain. Also, if anyone were so inclined, the digital record could be used to generate a new negative for reproduction in the future.





Figure 12. Damaged Negatives Can Still Retain Significant Clarity when Scanned



After these two major issues have been addressed, the next step would involve further care for the collection that has been secured with the fume absorbing storage materials. Each set of photographs within the boxes should be removed from its paper bag and placed in archival paper envelopes. I stress the use of archival paper versus the use of archival plastic. While the clear archival plastic would allow for quicker identification of what is stored in the envelope, plastic can be problematic in that it can also trap moisture. Because the Avery's archive has limited climate control, and due to Charleston's rampant high humidity, it would be safer to store the materials in paper which would allow any moisture that has entered to pass back out more freely.

While I advocate paper storage for the majority of the materials, my advice for the materials which are completely non-archival and likely detrimental to the collection – such as the original brown paper storage bags – is that they temporarily be stored in the same envelopes, separated from the other materials with an archival plastic sleeve. The plastic will, temporarily, prevent further off gassing from these materials from harming any other items in the same envelope. Once all of the materials were sorted in this manner, we could initiate the last phase of the project.

The final segment of the project would be cataloging the collection. Items could be scanned directly in to the PastPerfect system if a new scanner was



obtained, or items could be scanned off site. The College of Charleston does have scanning services available at the Faculty Technology Center in the Department of Academic Computing. Through this center, faculty and graduate assistants can sign up to use various equipment. Data could then be transferred to the Avery. However for proper cataloging of the Avery's research materials to begin, they must be connected to the mainframe of the College. Without this connection, proper storage will be impossible. It would be best to communicate with the Special Collections Department at the College of Charleston Library to find out what standards they have defined for their collections which they have put on the PastPerfect™ system. Maintaining a consistent cataloging system and standard of scanning will provide the most professional and cohesive collection for future reference.



## CONCLUSION

The technical standard for estimating the time needed to archive materials is seven hours per linear foot. Given that timetable, it would take an estimated 182 hours to catalog the Boags Collection. This should be considered generous given that this estimate does not account for digital archiving. However, if that estimate were doubled – which should be more than enough time for the project - it will still only be about two months of full time work to complete the task, which seems more than reasonable for a potentially important reference collection.

Even if the database that is created is limited to access from Charleston, it will still be an asset for both the College and the center. The ability to archive materials in this manner is actually a blessing and not the curse it may seem to be for those of us born before the computer savvy generations. As I have stated before, digital technology will only continue to progress. It is not going away, and the technology is improving exponentially. We can compare it to the cell phones we used just five years ago, the ones that seem so laughably large and bulky now when compared to the practically miniature models of today. Though some technology will come and go, it will be our responsibility to keep ourselves



updated on the changes in software and equipment for the better of our collections.

Just as we now attend conferences and read literature on what academic standards are set at, we must do the same with computer literacy. It is not enough to learn and employ one program and then sit back. By accepting the digital technology and adopting its use, we can limit the amount of physical handling of the actual collections. By allowing a researcher to work through a virtual archive, we can avoid unnecessary handling of these fragile materials. In this way the photographs and other documents need only be removed from the archive after a researcher has culled through the catalog and narrowed their need to specific materials.

The Avery currently stands at a critical turning point. While digital scanning may seem a daunting chore to attach to what is already a nearly overwhelming archiving project, what the Avery faces is actually an ideal opportunity to set a standard for digital archiving. As the work continues to properly organize the collections, Avery staff are presented with the perfect starting point – a blank slate. If the mission of the Avery is to be a research center, then the ability to provide access to the collections on a digital database – one that is not just limited to those who can afford to physically travel to Charleston – would be a prestigious achievement; one that betters not only the



name of the Avery and the College of Charleston, but also the available records to those who continue to research African-American history.